

Fig. 1a

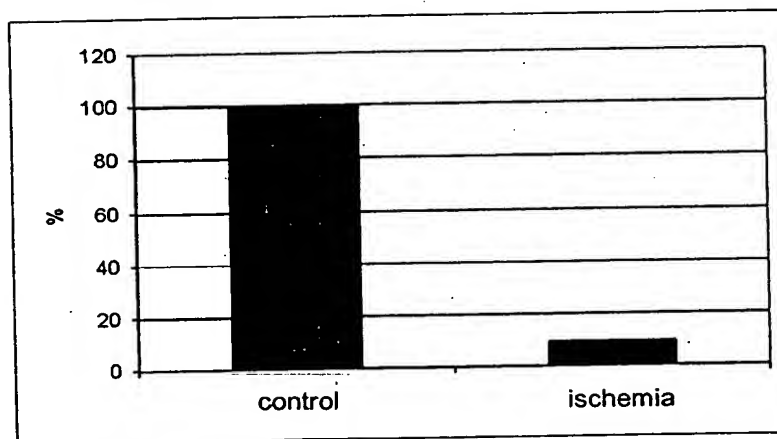


Fig. 1b

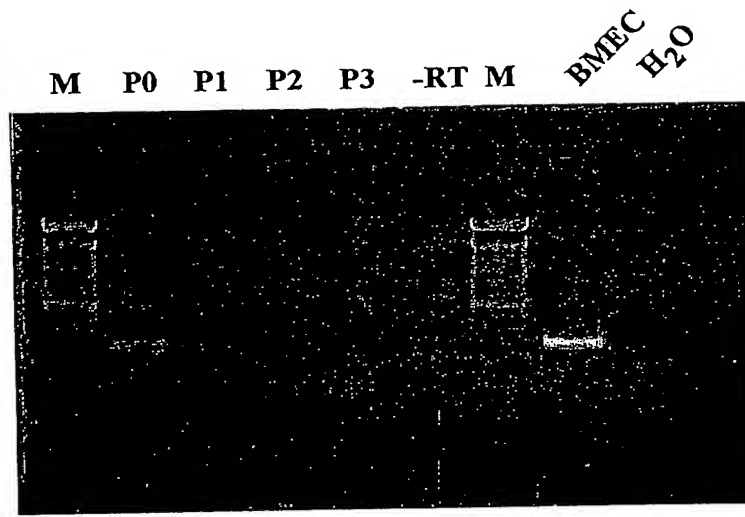


Fig. 2

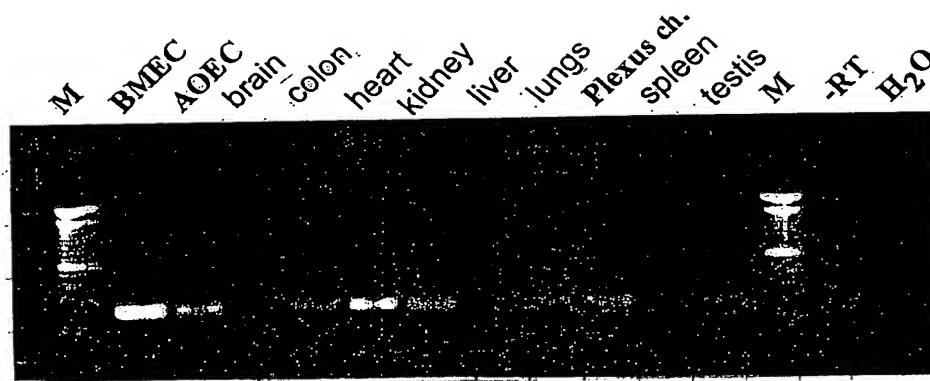


Fig. 3

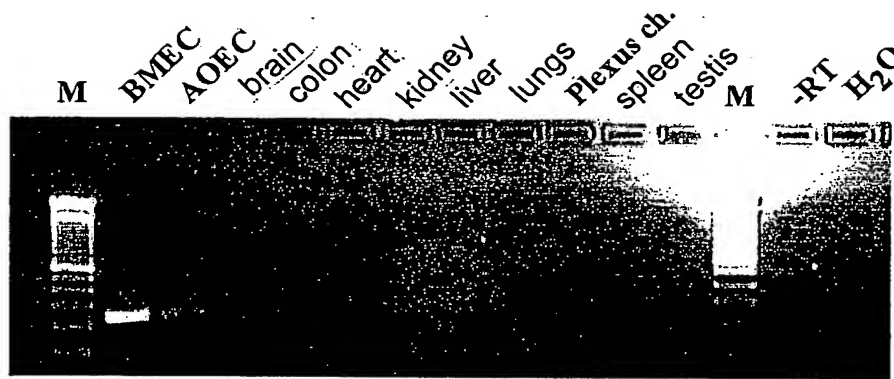


Fig. 4

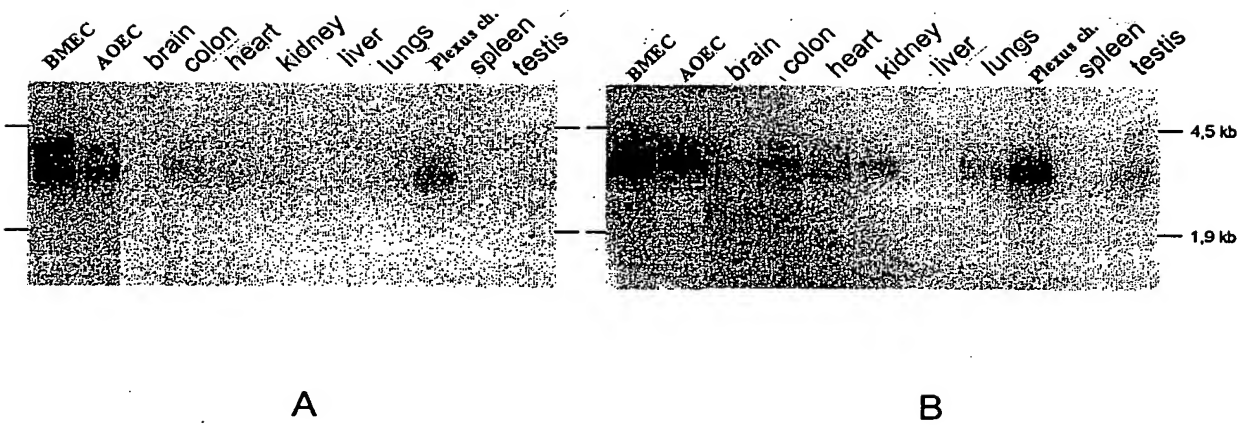


Fig. 5

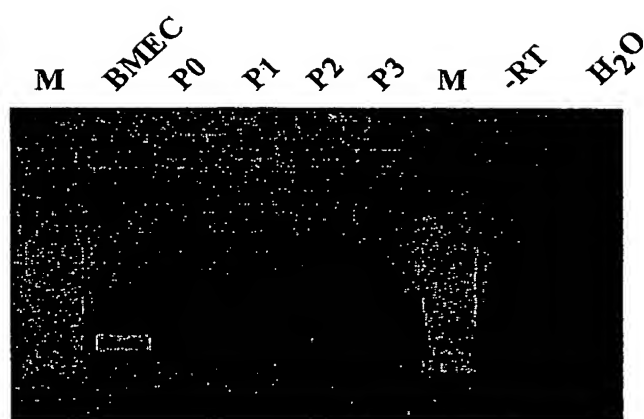


Fig. 8

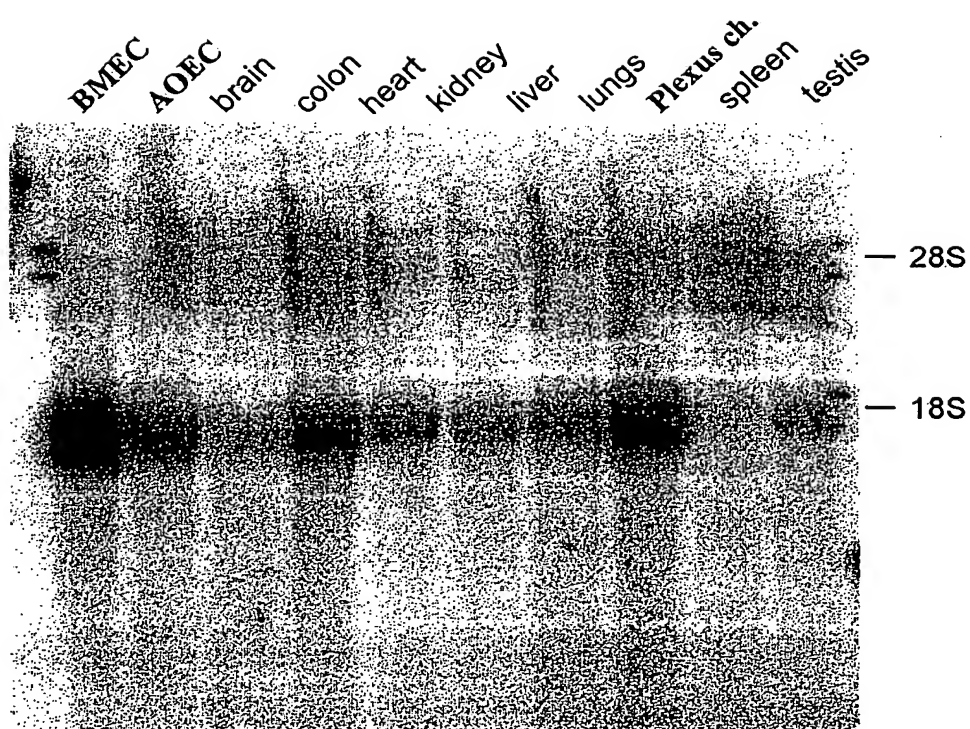


Fig. 9

human	M--AARTGHTALRRVVSGCRPKSATAAG---AQAPVRNGRYLASCGILMSRTLPLHTSI	54
pig	MFVAARTGQRTLRLKVVSGCRPKSATATGVPAPAQGGPPRNIRYLASCGILMNRTLPLHSSF	60
mouse	MIMAARTSQRALARVASGCHPKSTTVTEAP--ARGSARDVRHLAACGVLINRTLPPCAAV	58
	* ****:::* :*.***:***:.*: *:. . *: :***:***:.*.*** :..	
human	LPKEICARTFFKITAPLINKRKEYSERRILGYSMQEMYDVVSGVEDYKHFPWCKKSDVI	114
pig	LPKEMYARTFFRIAAPLINKRKEYSERRIIGYSMQEMYDVVSGMEDYKHFPWCKKSDVI	120
mouse	LPKEICARTFFRISAPLVNKRKEYSERRILGYSMQEMYDVVSGMEDYQHFPWCKKSDII	118
	****: ****:*.***:*****:*****:***:*****:*	
human	SKRSGYCKTRLEIGFPPVLERYTSVVTLVKPHLVKASCTDGRLFNHLETIWRFPGLPGY	174
pig	SRRSGYCKTRLEIGFPPVLERYTSVVTLVKPHLVKASCADGKLFNHLETVWRFPGLPGY	180
mouse	SRRSGYCKTRLEVGFPPVLERYTSIVTLVKPHLVKASCTDGKLFNHLETIWRFPGLPGY	178
	*:*****:*****:*****:***:*****:*****	
human	PRTCTLDFSISFEFRSLLHSQATLFFDEVVKQMVAAFERRACKLYGPETNIPRELMLHE	234
pig	PRTCTLDFSISFEFRSLLHSQATLFFDEVVKQMVAAFERRACKLYGPETSIPRELMLHE	240
mouse	PRTCTLDFSISFEFRSLLHSQATLFFDEVVKQMVAAFERRACKLYGPETNIPRELMLHE	238
	*****.*****	
human	VHHT	238
pig	VHHT	244
mouse	IHHT	242
	:***	

Fig. 10

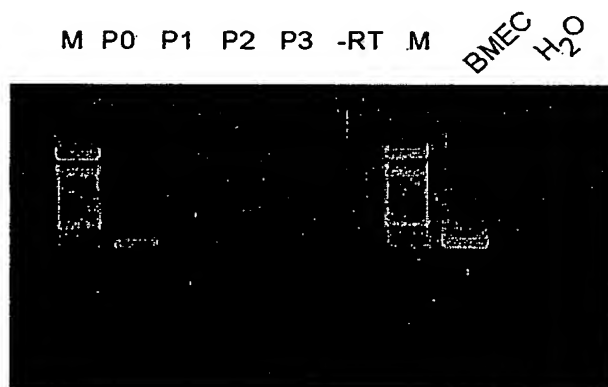


Fig. 11

MGNQVEKLTH	LSYKE <u>EVPTAD</u>	<u>PTGVDRDDGP</u>	<u>RIGVSYIFSN</u>	DDEDVEPQPP
PQGPDGGLP	DGGDGPPPPQ	PQPYDPR <u>LHE</u>	<u>VECSVFYRDE</u>	<u>CIYQKSFAPG</u>
<u>SAALSTYTPE</u>	<u>NLLNKCKPGD</u>	LVEFVSQAQY	PHWAVYVGNF	QVVHLHRLEV
INSFLTDASQ	GRRGR <u>VVNDL</u>	<u>YRYKPLSSSA</u>	VVRNALAHVG	AK <u>ERELSWRN</u>
<u>SESFAAWCRY</u>	GKREFKIGGE	LR <u>IGKQPYRL</u>	<u>QIQLSAQRSH</u>	<u>TLEFQSLEDL</u>
<u>IMEKRRNDQI</u>	GRAAVLQELA	THLHPAEPEE	GDSNVARTTP	PPGRPPAPSS
EEEDGEAVAH				

Fig. 12

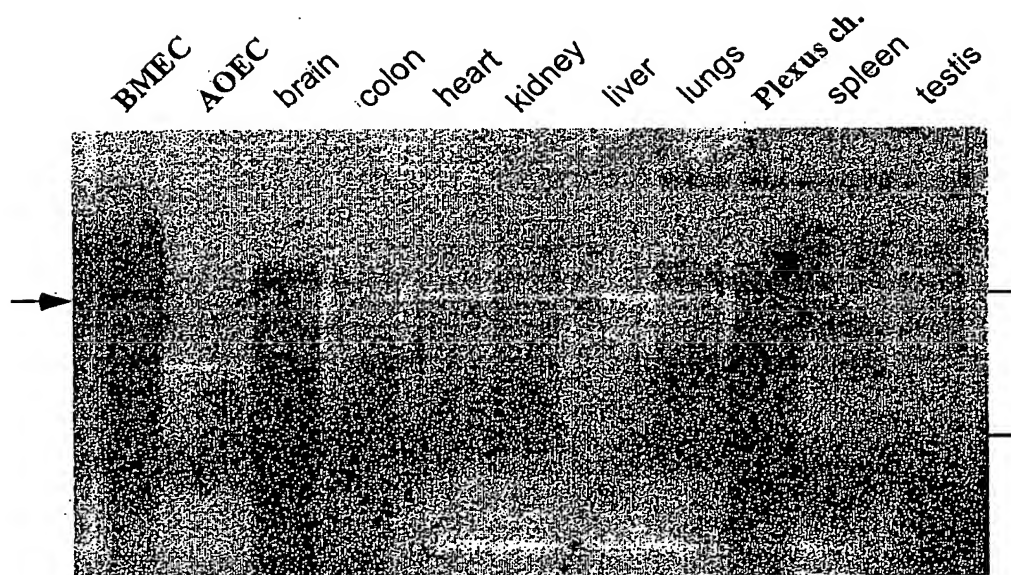


Fig. 13

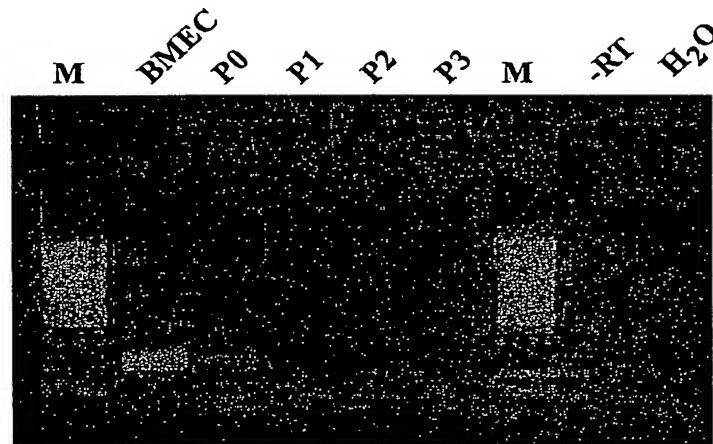


Fig. 14

```
NSE2      MGNOQVEKILTHLSYKEVPTADPTGVDRDDGPRIGVSYIFSNDDDEDVEPQQPPQGPDGGGLP    60
NSE1      MGNQLDRITHLNYSELPTGDPSGIEKDE-LRVGVAYFFSDDEEDLDERGQPKFGVKAPP    59
          ****:::**.*.:**.*.:*:***:*.**: : * : . . *

NSE2      DGGDGP PPPQPQP-----YDPRLHEVECSVFYRDECIYQK-SFAPGSAALSTYTPENLLNK   115
NSE1      GCTPCPESPSRHQHLLHQLVLNETQFSAFRGQCIFSKVSGGPQAGADLSVYAVTALPAL   119
          . * . * . : : : *:.* :****:* * . * . **.* : *

NSE2      CKPGDLVEFVS-----QAQYPHWAVYVGNFQVVHLHRLEVINSLTDASQGRGRVNVN   168
NSE1      CEPGD LLELLWLQPAPEPPAPAPHWAVYVGGGQI IHLHQGEIRQDSL YEAGAANVGRVNVN   179
          *:****:*:: * *****. *:****: *: :. * :. .. *****

NSE2      DLRYRKPLSSSAVVRNALAHVGAKERELSWRNSESFAAWCRYGKREFKGIGELRIGKP-   227
NSE1      SWYRYRPLVAELVVQNACGHGLKSEEICWTNSESFAAWCRFGKREFKAGGEVPACTOPP   239
          . ***:* * :. **:** .*:* *.*:.* *****.****** ***: *.*

NSE2      ---YRLQIQLSAQRSHTLEFQSLEDLIMEKRNRNDQIGRAAVLQELATHLHPAEPEEGDSN   284
NSE1      QQQYYLKVHLGENKVHTARFHSLDLIREKRRI DASGRLRVLQELADLVDDKE-----   292
          * *::*: :: ** .:***** ***** * ** ***** :. *.....

NSE2      VARTTPPPGRPPAPSSEEDGEA VAH    310
NSE1      -----
          : : :... :.: : : : : :
```

Fig. 15


```

MGNQVEKLTHLSYKEVPTADPTGVDRDDGPRIGVSYIFSNDDEDVEPQPP 50
-----
PQGPDGGGLPDGGDGPPPPQPPYDPRLEHEVECSVFYRDECIYQKSFAPG 100
+++++
SAALSTYTPENLLNKCKPGDLVEFVSQAQYPHWAVYVGNFQVVHLHRLEV 150
-----
INSFLTASQGRGRVNDLYRYKPLSSAVVRNALAHVGAKERELSWRN 200

SESFAAWCRYGKREFKIGGELRIGKQPYRLQIQLSAQRSHTLEFQSLEDL 250

IMEKRRNDQIGRAAVLQELATHLHPAEPEEGDSNVARTTPPPGRPPAPSS 300
+++++
EEEDGEAVAH 310
+++++

```

```

+++++
-----

```

possible PEST sequences
poor PEST sequences

Fig. 16

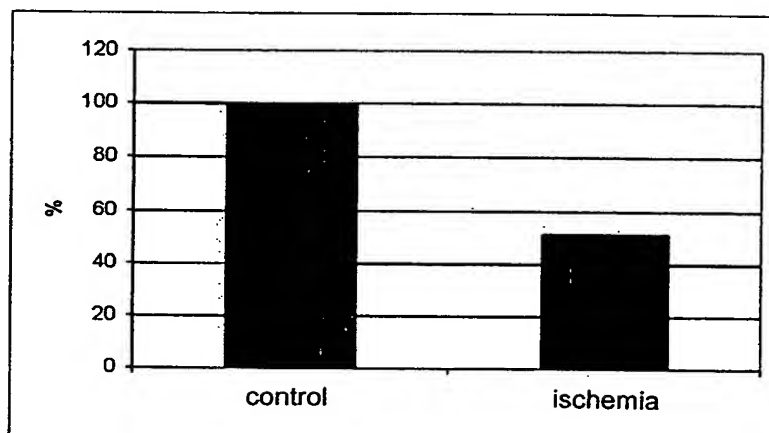


Fig. 17

MAALAPLPPL PAQLKSIQHH LRTAQEHDKR DPVVAYYCRL YAMQTGMKID
SKTPECRKFL SKLMDQLEAL KKQLGDNEAI TQEIVGCAHL ENYALKMFLY
ADNEDRAGRF HKNMIKSFYT ASLLIDVITV FGELTDENVK HRKYARWKAT
 YIHNCLKNGE TPQAGPVGIE EDNDIEENED AGAASLPTQP TQPSSSSTYD
 PSNMPSGNYT GIQIPPGAHA PANTPAEVPH STGVASNTIQ PTPQTIPAI
 PALFNTISQG DVRLTPEDFA RAQKYCKYAG SALQYEDVST AVQNLQKALK
LLTTGRE

Fig. 18

human	MAALAPLPPLPAQLKSIQHHLRTAQEHDKRDPVVAYYCRLYAMQTGMKIDSKTPECRKFL	60
mouse	MAALAPLPPLPAQFKSIQHHLRTAQEHDKRDPVVAYYCRLYAMQTGMKIDSKTPECRKFL	60
	*****:*****	
human	SKLMDQLEALKKQLGDNEAITQEIVGCAHLENYALKMFLYADNEDRAGRFHKNMIKSFYT	120
mouse	SKLMDQLEALKKQLGDNEAVTQEIVGCAHLENYALKMFLYADNEDRAGRFHKNMIKSFYT	120
	*****:*****	
human	ASLLIDVITVFGELTDENVKHRKYARWKATYIHNCLKNGETPQAGPVGIEEDNDIEENED	180
mouse	ASLLIDVITVFGELTDENVKHRKYARWKATYIHNCLKNGETPQAGPVGIEEENDVEENED	180
	*****:*****	
human	AGAASLPTQPTQPSSSSTYDPSNMPSGNYTGIQIPGAHAPANTPAEVPHSTGVASNTIQ	240
mouse	VGATSLPTQPPQPSSSSAYDPSNLAPGSYSGIQIPGAHAPANTPAEVPHSTGVTSTNAVQ	240
	.**:	
human	PTPQTIP--AIDPALFNTISQGDVRLTPEDFARAQKYCKYAGSALQYEDVSTAVQNLQK	297
mouse	PSPQTVPAAPAVDPDLY-TASQGDRLTPEDFARAQKYCKYAGSALQYEDVGTAVQNLQK	299
	*:	
human	ALKLLTTGRE	307
mouse	ALRLLTTGRE	309
	**:*:*:*:*:	

Fig. 19

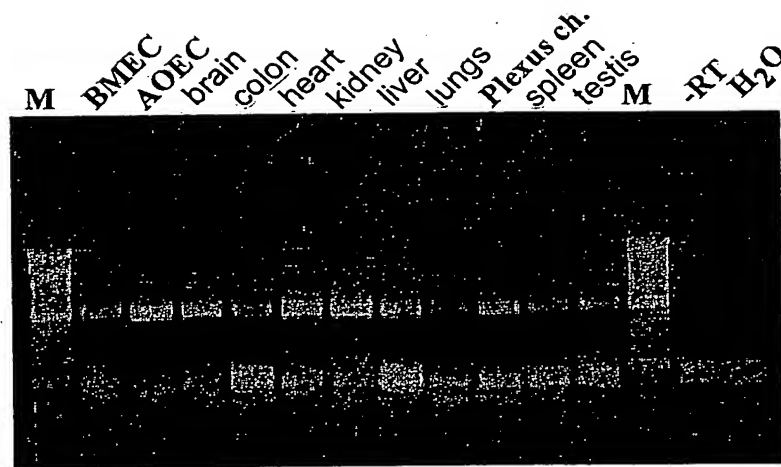


Fig. 20

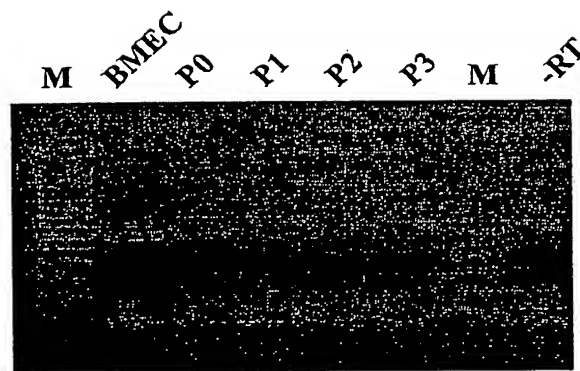


Fig. 21

<u>MAAPEPLRPR</u>	LCRLVRGEQG	YGFHLHGEKG	<u>RRGQFIRRVE</u>	PGSPAEEAAL
<u>AGDRLVEVNG</u>	<u>VNVEGETHHQ</u>	<u>VVQRIKAVEG</u>	<u>QTRLLVVDQE</u>	<u>TDEELRRRQL</u>
TCTEEMAQRG	LPPAHDPWEP	KPDWAHTGSH	SSEAGKKDVS	GPLRELRPRL
CHLR <u>KGPQGY</u>	<u>GFNLHSDKSR</u>	<u>PGQYIRSVDP</u>	GSPAARSLR	AQDR <u>LIEVNG</u>
<u>QNVGLRHAE</u>	<u>VVASIKARE</u>	EARLLVVDPE	TDEHFKRLRV	TPTEEHVEGP
LPSPVTNGTS	PAQLNGGSAC	SSRSDLPGSD	KDTE <u>DGSAWK</u>	<u>QDPFQESGLH</u>
<u>LSPTAAEARR</u>	<u>RLEPCESTSA</u>	<u>RHRWTGTGSV</u>	KSSATSEPLP	ACLGTLGPLP
HGPWASACPE	LPQPQWTGGW	SCHCPEISPS	PGEPPSCPCP	PGTGGLWQQD
RGRETQRCER	ESETETERER	ERHRERQRES	ERARGSRGAR	AFAALPGPAD

Fig. 22

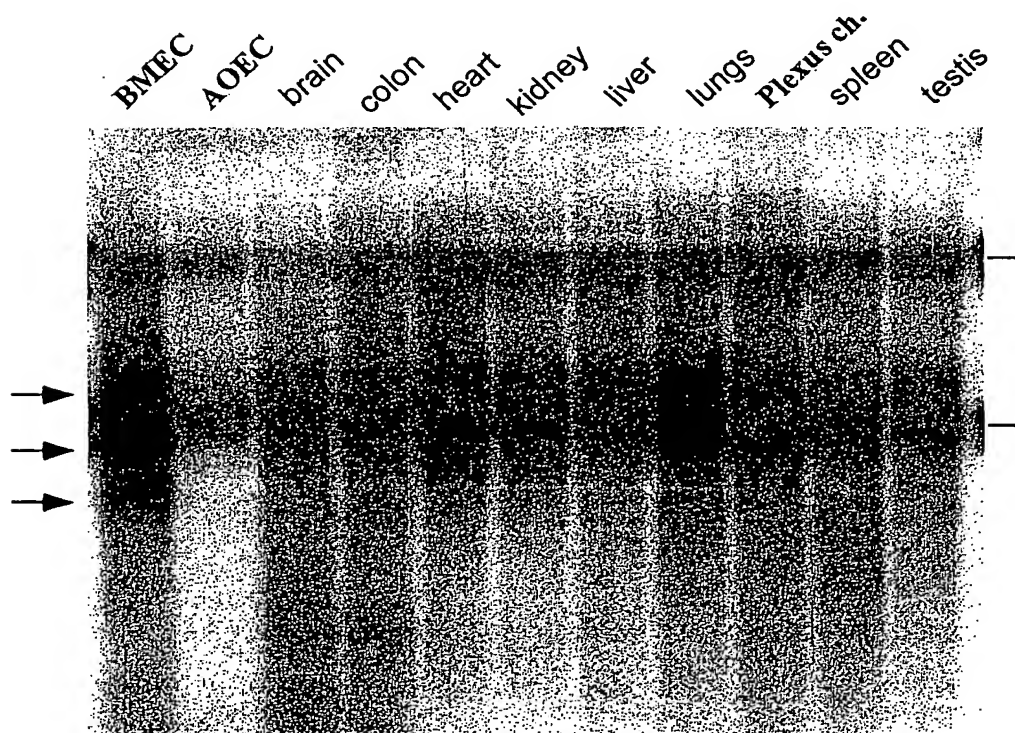


Fig. 23

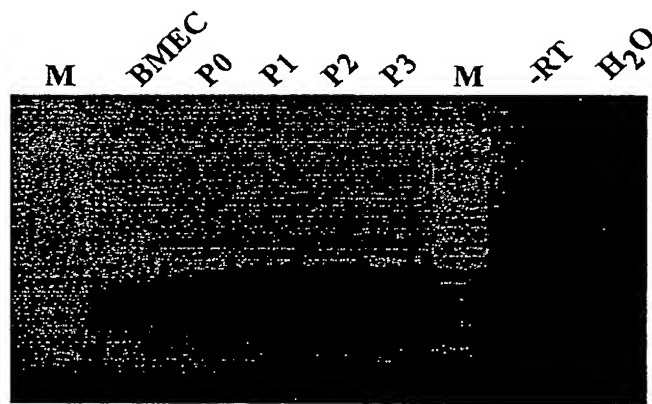


Fig. 24

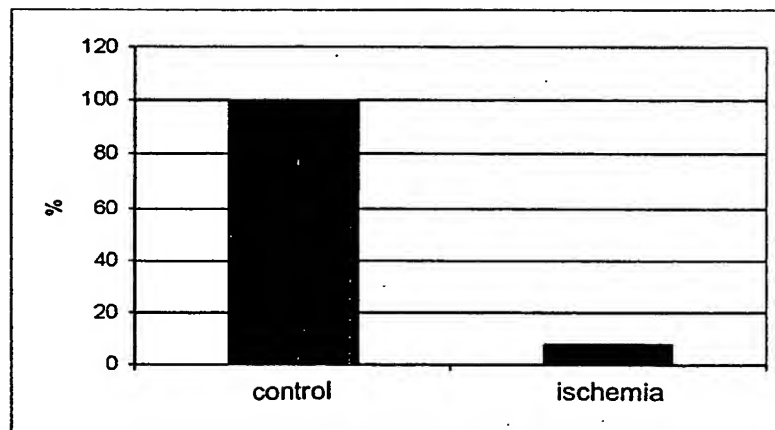


Fig. 25

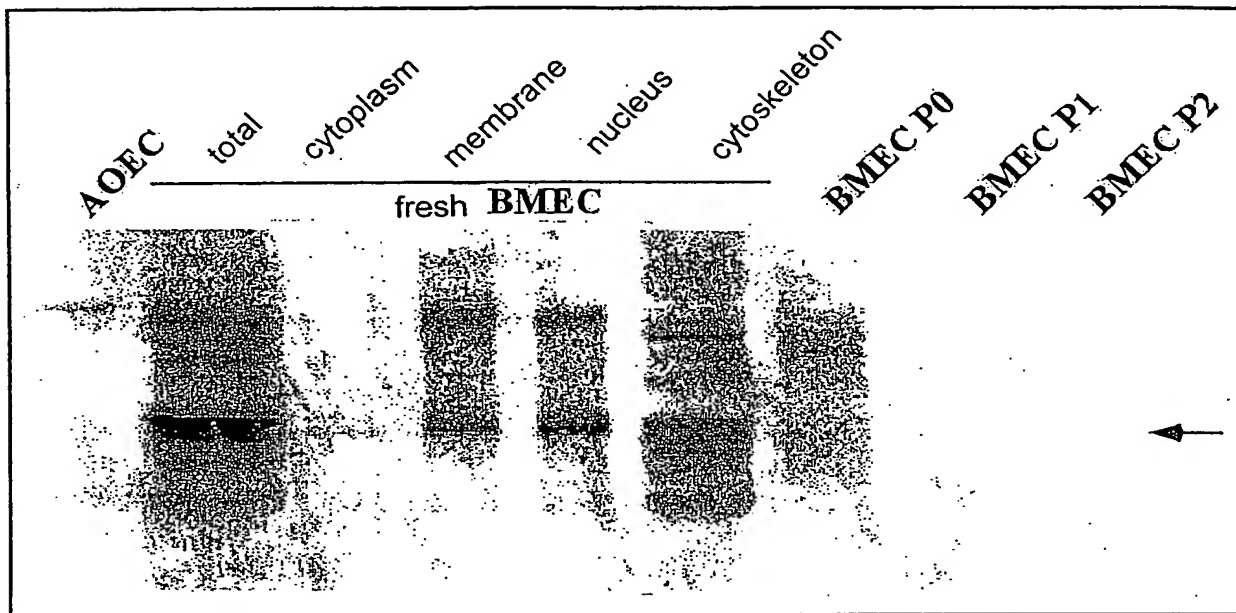


Fig. 26

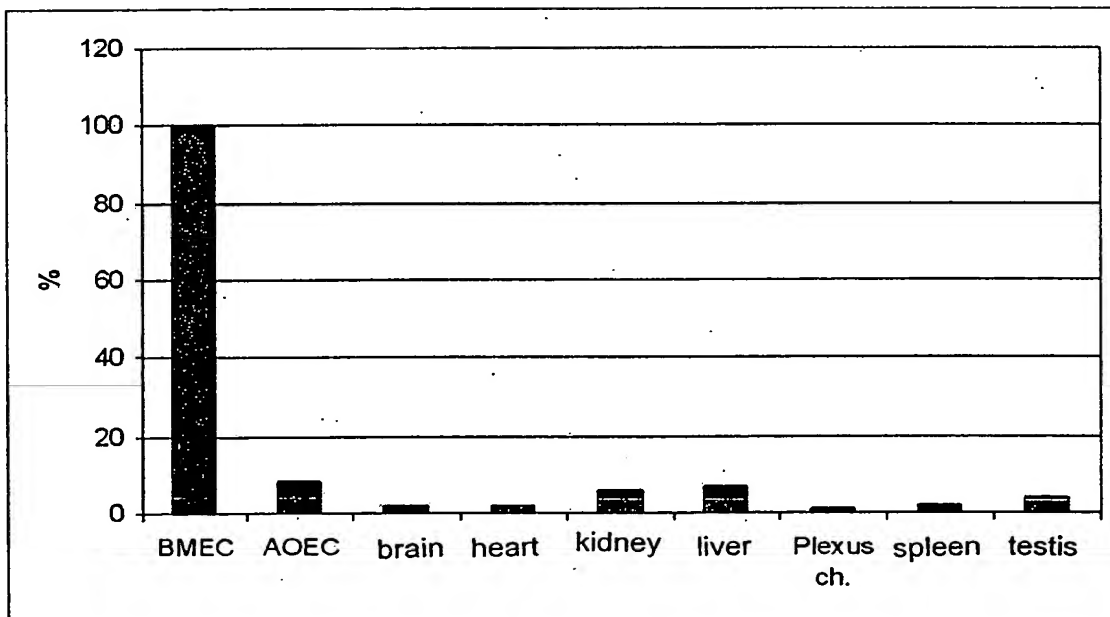


Fig. 27

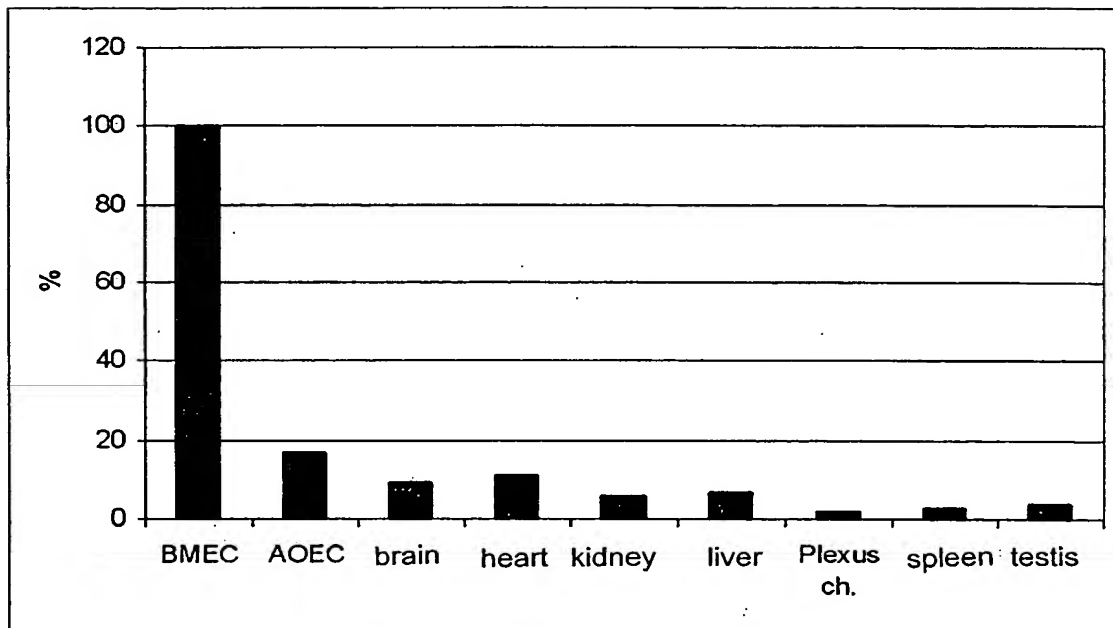


Fig. 28

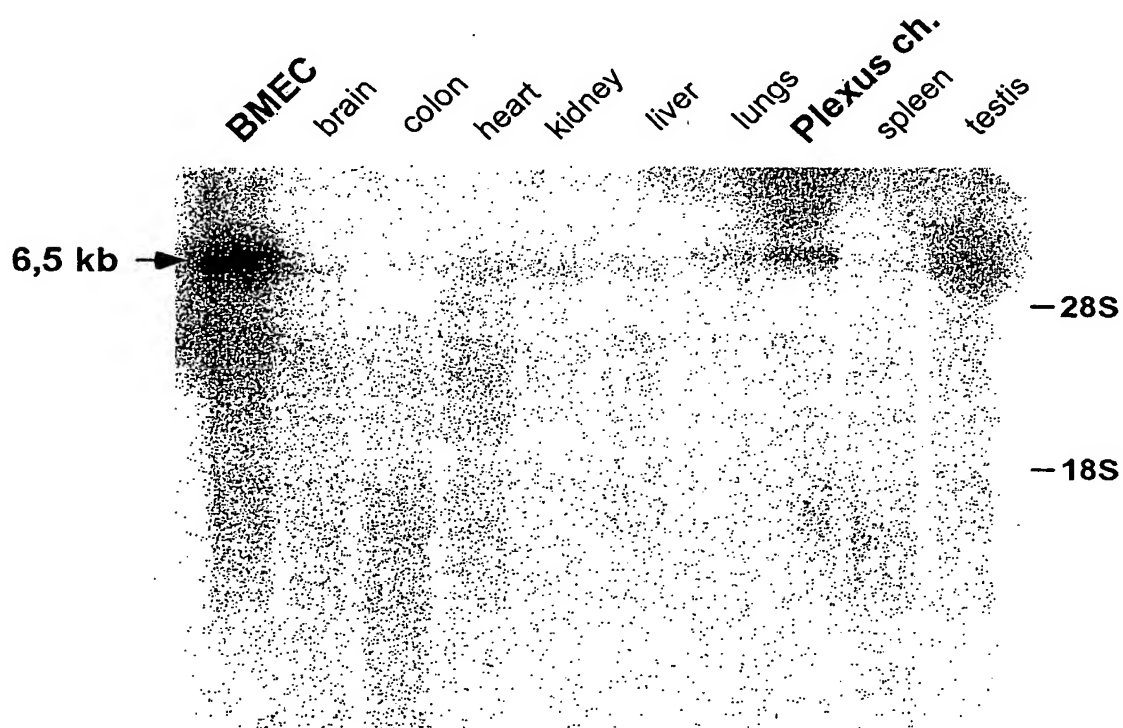


Fig. 29

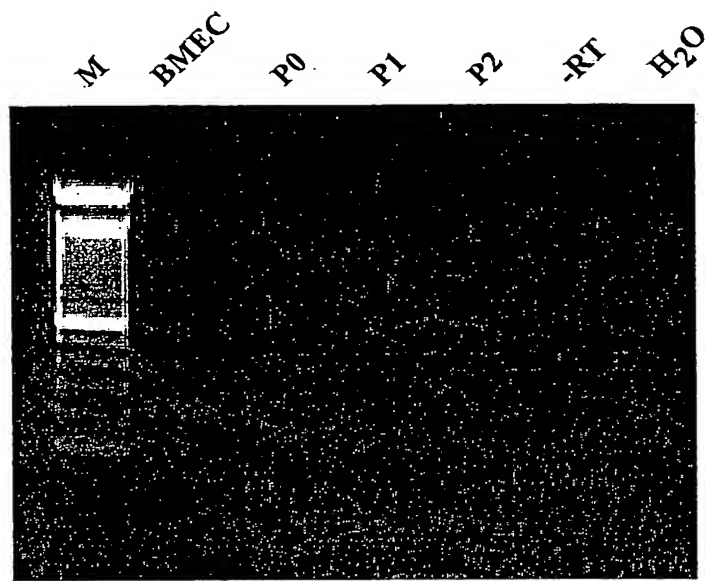


Fig. 30

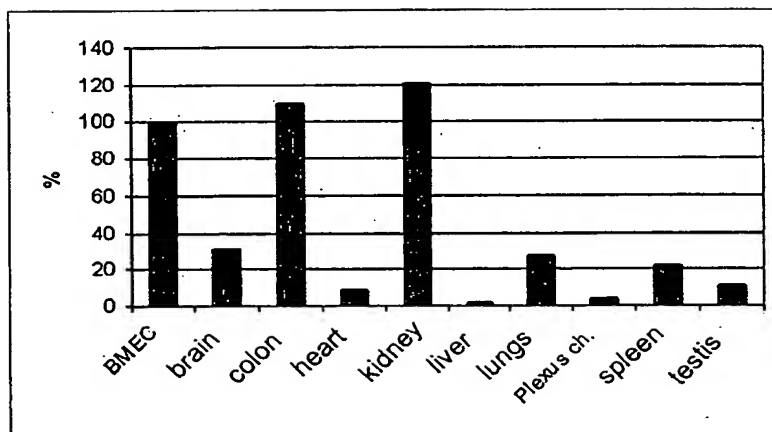


Fig. 31

HSNV1: 48 MSLCICGTAITSQYLAERYKVNTPMLQSFINYCLLFliYTVMLAFRSGSDNLLVILKRK 107
 MSLCICGTAITSQYLAE+YKVNTPMLQSFINYCLLFliYT+MLAF+SG++NLL ILK+K
 PNOV1: 1 MSLCICGTAITSQYLAERYKVNTPMLQSFINYCLLFliYTMMLAFQSGNLLCILKKK 60

 HSNV1: 108 WWKYILLGLADVEANYVIVRAYQYTTLTsvQLLDCFGIPVLMALSWFILHARYRVIHFIA 167
 WWKYILLGLADVEANY+IVRAYQYTTLTsvQLLDCFGIPVLMALSWFIL+ARYRVIHFIA
 PNOV1: 61 WWKYILLGLADVEANYLIVRAYQYTTLTsvQLLDCFGIPVLMALSWFilyARYRVIHFIA 120

 HSNV1: 168 VAVCLLGVTMVGADILAGREDNSGSDVLIGDILVLLGASLYAISNVCEEYIVKKLSRQE 227
 VAVCLLGVTMVGADILAGREDNSGSDVLIGD+LVLLGASLYA+SNVCEEYIVKKLSRQE
 PNOV1: 121 VAVCLLGVTMVGADILAGREDNSGSDVLIGDVLVLLGASLYAVSNVCEEYIVKKLSRQE 180

 HSNV1: 228 FLGMVGLFGTIISGIQLLIVEYKDIAIHWDWKIALLFVAFALCMFCLYsfMPLVIKVTs 287
 FLGMVGLFGTIISGIQLLIVEYKDIAIHWDWKIALLFVAFALCMFCLYsfMPLVIKVTs
 PNOV1: 181 FLGMVGLFGTIISGIQLLIVEYKDIAIHWDWKIALLFVAFALCMFCLYsfMPLVIKVTs 240

 HSNV1: 288 ATSVNLGILTADLYSLFVGLFLFGYKFSGLYILSFTVIMVGFILYcSTPTrTAEPaESSV 347
 ATSVNLGILTADLYSLF GLFLFGYKFSGLYILSF VIMVGFILYcSTPTrTAEPaESSV
 PNOV1: 241 ATSVNLGILTADLYSLFFGLFLFGYKFSGLYILSFAVIMVGFILYcSTPTrTAEPaESSV 300

 HSNV1: 348 -PPVTSIGIDNLGLKLEENLQETHSAVL 374
 PPVTSIGIDNLGLKLEENL ETHS L
 PNOV1: 301 PPPVTSIGIDNLGLKLEENLPETHSVAL 328

Fig. 32

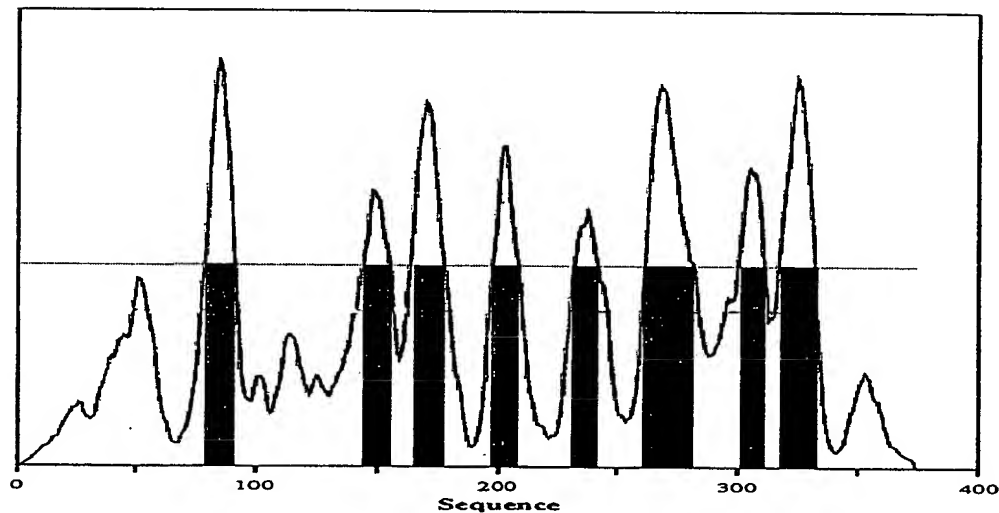


Fig. 33

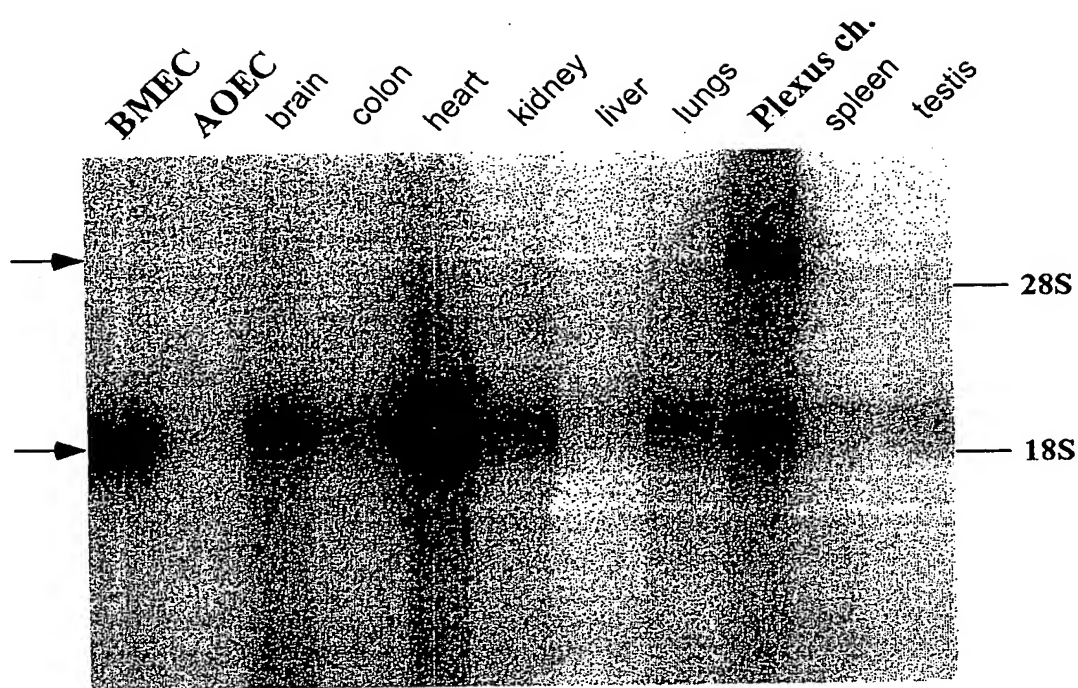


Fig. 34

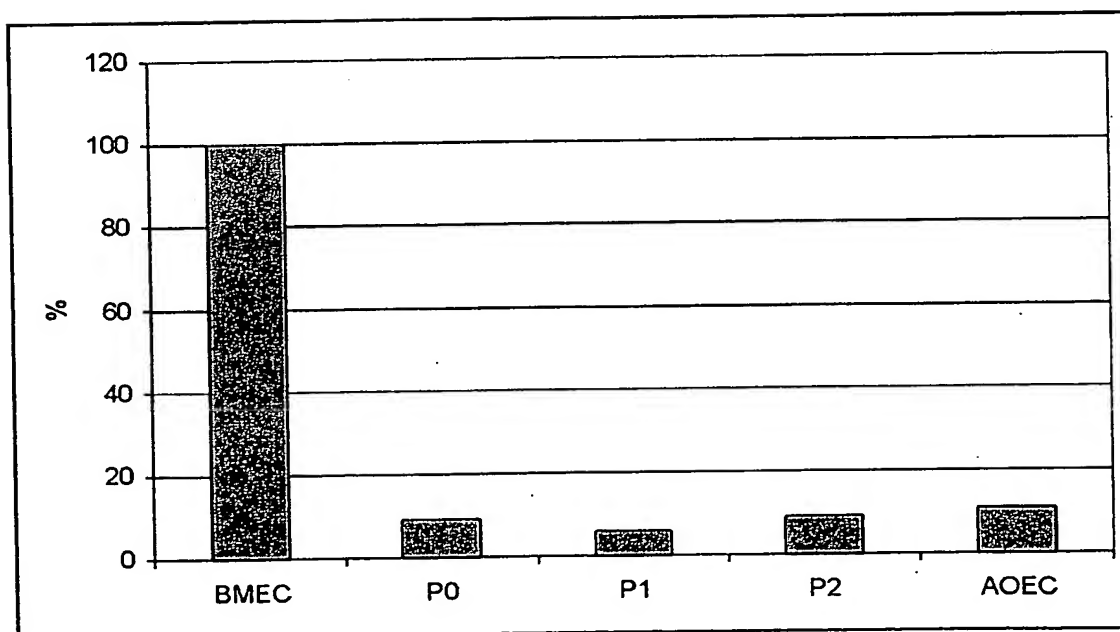


Fig. 35

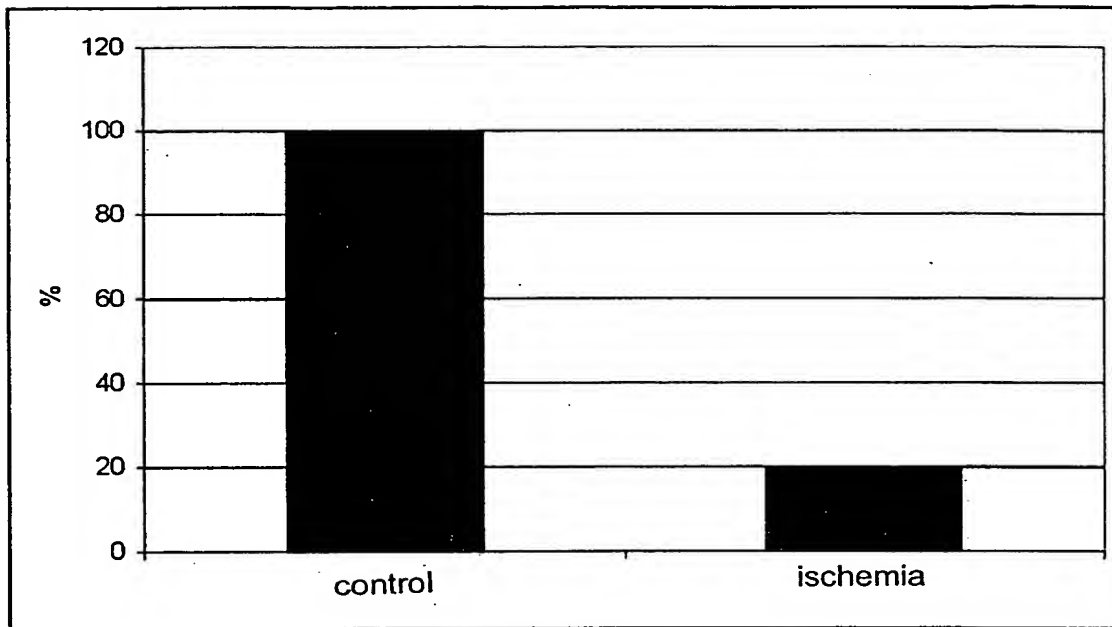


Fig. 36

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ BLACK BORDERS
- ☐ IMAGE CUT OFF AT TOP, BOTTOM OR SIDES
- ☒ FADED TEXT OR DRAWING
- ☒ BLURRED OR ILLEGIBLE TEXT OR DRAWING
- ☐ SKEWED/SLANTED IMAGES
- ☐ COLOR OR BLACK AND WHITE PHOTOGRAPHS
- ☐ GRAY SCALE DOCUMENTS
- ☐ LINES OR MARKS ON ORIGINAL DOCUMENT
- ☐ REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY
- ☐ OTHER: _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.